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10/762,091	01/20/2004	Atsushi Miyamoto	16869N-103800US	4602

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TOWNSEND AND TOWNSEND AND CREW, LLP  
TWO EMBARCADERO CENTER  
EIGHTH FLOOR  
SAN FRANCISCO, CA 94111-3834

EXAMINER
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RASHID, DAVID

ART UNIT	PAPER NUMBER
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2624

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10/04/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/762,091

Applicant(s)

MIYAMOTO ET AL.

Examiner

David P. Rashid

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 9/6/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 18-23 is/are pending in the application.
- 4a) Of the above claim(s) 1-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date See Continuation Sheet.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :1/20/2004;  
7/10/2006; 5/25/2007.

### DETAILED ACTION

All of the examiner's suggestions presented herein below have been assumed for examination purposes, unless otherwise noted.

#### *Election/Restriction*

1. Election was made **without** traverse of **Invention I Species B** (i.e. **claims 18 – 22**) by applicant in the reply filed on 9/6/2007 is acknowledged.
2. **Claims 1 – 17** are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected **Invention II** and **Invention I Species A**, there being no allowable generic or linking claim.

#### *Priority*

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d) (Application # 2003-047290, filed 1/20/2004), which papers have been placed of record in the file.

#### *Specification*

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
5. Applicant is reminded of the proper language and format for an abstract of the disclosure.  
  
The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the

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printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

### ***Claim Objections***

6. The following is a quotation of 37 CFR 1.75(a):

The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.

7. **Claims 20** is objected to under 37 CFR 1.75(a), as failing to conform to particularly point out and distinctly claim the subject matter which application regards as his invention or discovery.

(i) Claim 20 line 3 cite "said classifier" but it unclear as to whether it is directed to the "said first defect classifier" or "said second defect classifier" – suggesting changing to "said second defect classifier"

(ii) Claim 22, line 2 cites "said second defect classifier" that lacks antecedent basis – suggest changing to "said ~~second defect~~ classifier"

8. **Claim 23** is objected to under 37 CFR 1.75 as being a substantial duplicate of **claim 20**. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim

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to object to the other as being a substantial duplicate of the allowed claim. See MPEP

§ 706.03(k). The examiner believes applicant was trying to depend claim 23 from claim 22.

### *Claim Rejections - 35 USC § 102*

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. **Claims 18 – 23** are rejected under 35 U.S.C. 102(b) as being anticipated by Straforini et al. (US 6,092,059 A).

Regarding **claim 18**, Straforini discloses a method (FIG. 2; FIG. 3; FIG. 5B) of classifying defects (FIG. 1), comprising the steps of:

determining, for each defect classification class (“Defect Class” in TABLE II in Col. 13 and TABLE IV, TABLE VII in Col. 20 are some of the examples given) of a first defect classifier (FIG. 3, elements 54, 56) for a first inspection machine (FIG. 3, FIG. 5B, elements 18, 54, 56; a machine is an electronic device that transmits/modifies energy to perform/assists in tasks and elements 18, 54, 56 may constitute as a “first inspection machine” as the electronic device elements in combination transmit/modify energy to perform/assist in tasks), a rate of defects (“classification table that defines subclasses of the main classes defined by TBC” in Col.

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14, lines 14 – 25; element 58 knows that the objects it receives are already classified, defining them into sub-classes and thus determining a rate of defects of these subclasses) to be sampled and detected by a second inspection machine (FIG. 3, FIG. 5B, element 58; a machine is an electronic device that transmits/modifies energy to perform/assists in tasks and element 58 may constitute as a “second inspection machine” as the electronic device elements in combination transmit/modify energy to perform/assist in tasks) among defects detected (FIG. 3, element 40; 50) by a first inspection machine; and

and detecting, with said second inspection machine (FIG. 3, FIG. 5B, element 58), defects detected when a sample targeted (FIG. 3, elements 36, 18) for inspection is inspected (FIG. 3, element 40, 50) by said first inspection machine (FIG. 3, FIG. 5B, elements 18, 54, 56), in accordance with said determined sampling rate (“classification table that defines subclasses of the main classes defined by TBC” in Col. 14, lines 14 – 25; element 58 knows that the objects it receives are already classified and not unclassified, defining them into sub-classes and thus determining a rate of defects of these subclasses) for each defect class (“Defect Class” in TABLE II in Col. 13), and classifying the detected defects (“subclasses” in Col. 1, element 28 – 39) with a second defect classifier (FIG. 3, element 58) corresponding to said second inspection machine;

wherein the step of determining, for each defect classification class of a first defect classifier corresponding to said first inspection machine, said rate of defects to be sampled and detected by said second inspection machine comprises the sub-steps of:

inspecting (FIG. 3, elements 40, 50) an inspection sample (FIG. 3, elements 36, 38) with a first inspection machine (FIG. 3, FIG. 5B elements 18, 54, 56);

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classifying defects of said inspection sample inspected and detected by the first inspection machine (FIG. 3, FIG. 5B elements 18, 54, 56) with said first defect classifier (FIG. 3, FIG. 5B, elements 54, 56);

detecting defects of said inspection sample detected by said first inspection machine with a second inspection machine (FIG. 3, FIG. 5B, element 58 that detect the classified objects already classified from elements 54, 56);

classify said defects of said inspection sample detected by the second defect inspection machine with said second defect classifier (FIG. 3, FIG. 5B, element 58); and

determining, for said each defect classification class ("Defect Class" in TABLE II in Col. 13 and TABLE IV, TABLE VII in Col. 20 are some of the examples given), said sampling rate for defects that are detected by said first inspection machine (FIG. 3, FIG. 5B elements 18, 54, 56) and classified by said first defect classifier (FIG. 3, FIG. 5B, elements 54, 56) in accordance with a relationship (element 58 relies on element 54, 56 since it only receives classified objects from elements 54, 56 and knows they are not unclassified objects; one such relationship in FIG. 3 could be "REFINED OBJECT CLASSIFICATION" = "CLASSIFIED OBJECTS" (from element 56) – "UNREFINED OBJECT CLASSIFICATION") between the classification class of the defects ("CLASSIFIED OBJECTS" from element 56 in FIG. 3) in said inspection sample classified with said first defect classifier (FIG. 3, FIG. 5B, elements 54, 56) and the classification class of the defects ("REFINED OBJECT CLASSIFICATION" or "UNREFINED OBJECT CLASSIFICATION" in FIG. 3) in said inspection sample classified with said second defect classifier (FIG. 3, FIG. 5B, element 58).



Regarding **claim 19**, Straforini discloses the method according to claim 18, wherein said second defect classifier (FIG. 3, FIG. 5B, element 58) has a decision tree (“REFINED OBJECT CLASSIFICATION” (for subclass recognition) and “UNREFINED OBJECT CLASSIFICATION” in FIG. 3) for hierarchically expanding defect classification class elements via branch elements (the branches are the arrows leaving element box 56 in FIG. 3), and wherein said decision tree is such that a classification rule (the classification rule is whether the object is sub-classed for “refined object classification” or just originally classed) created with sample inspection information (FIG. 3, element 54) that has been previously derived from an inspection of an inspection sample (FIG. 3, element 36, 18) is individually set for each of said branch elements.

Regarding **claim 20**, Straforini discloses the method according to claim 19, wherein said classification rule that is individually set for each of said branch elements in said second classifier (refer to references/arguments cited in claim 21) is set from a screen that displays sample inspection information derived from an inspection of said inspection sample (“e.g., the distinction between two subclasses is a subjective judgment of the system operator, and also because the system operator might misclassify objects based on fine subclass distinctions...”, in Col. 14, lines 26 – 43, to do this the operator must view inspection information on some sort of “screen”).

Regarding **claim 21**, Straforini discloses a method (FIG. 2; FIG. 3; FIG. 5B) of classifying defects (FIG. 1), comprising the steps of:

determining a rate of defects (“classification table that defines subclasses of the main classes defined by TBC” in Col. 14, lines 14 – 25; element 58 knows that the objects it receives

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are already classified, defining them into sub-classes and thus determining a rate of defects of these subclasses) to be sampled and detected by a second inspection machine (FIG. 3, FIG. 5B, element 58; a machine is an electronic device that transmits/modifies energy to perform/assists in tasks and element 58 may constitute as a “second inspection machine” as the electronic device elements in combination transmit/modify energy to perform/assist in tasks) among defects detected (FIG. 3, element 40; 50) by a first inspection machine (FIG. 3, FIG. 5B, elements 18, 54, 56; a machine is an electronic device that transmits/modifies energy to perform/assists in tasks and elements 18, 54, 56 may constitute as a “first inspection machine” as the electronic device elements in combination transmit/modify energy to perform/assist in tasks); and

detecting, with said second inspection machine (FIG. 3, FIG. 5B, element 58), defects detected when a sample targeted (FIG. 3, elements 36, 18) for inspection is inspected (FIG. 3, element 40, 50) by said first inspection machine (FIG. 3, FIG. 5B, elements 18, 54, 56), in accordance with said determined sampling rate (“classification table that defines subclasses of the main classes defined by TBC” in Col. 14, lines 14 – 25; element 58 knows that the objects it receives are already classified and not unclassified, defining them into sub-classes and thus determining a rate of defects of these subclasses) for each defect class (“Defect Class” in TABLE II in Col. 13), and classifying the detected defects (“subclasses” in Col. 1, element 28 – 39);

wherein the step of determining said rate of defects to be sampled and detected by said second inspection machine comprises the sub-steps of:

inspecting (FIG. 3, elements 40, 50) an inspection sample (FIG. 3, elements 36, 38) with a first inspection machine (FIG. 3, FIG. 5B elements 18, 54, 56);

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classifying the defects inspected and detected by the first inspection machine (FIG. 3, FIG. 5B elements 18, 54, 56) with a first defect classifier (FIG. 3, FIG. 5B, elements 54, 56); and determining a rate of defects (“classification table that defines subclasses of the main classes defined by TBC” in Col. 14, lines 14 – 25; element 58 knows that the objects it receives are already classified, defining them into sub-classes and thus determining a rate of defects of these subclasses) sampled by said second inspection machine (FIG. 3, FIG. 5B, element 58) for each defect classification class (“Defect Class” in TABLE II in Col. 13; “subclasses” in Col. 1, element 28 – 39) in accordance with reliability (element 58 relies on element 54, 56 since it only receives classified objects from elements 54, 56 and knows they are not unclassified objects) of classification to each classification class of defects classified with said first defect classifier (FIG. 3, FIG. 5B, elements 54, 56) for said each defect classification class.

Regarding **claim 22**, claim 19 recites identical features as in claim 22. Thus, references/arguments equivalent to those presented above for claim 19 are equally applicable to claim 22.

Regarding **claim 23**, claim 20 recites identical features as in claim 23. Thus, references/arguments equivalent to those presented above for claim 20 are equally applicable to claim 23.

It must be noted that a similar rejection to claims 18 – 23 could be given between a first inspection machine (FIG. 3, elements 18, 54) and a second inspection machine (FIG. 3, element 56, 58, 60) where the training-based classifier (TBC) element 56 is switched, as the TBC is

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dependent on the sampling rate of element 54 (as opposed to arguing element 58 is dependent on the sampling rate of 56 which is also true).

***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David P. Rashid whose telephone number is (571) 270-1578. The examiner can normally be reached Monday - Friday 8:30 - 17:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Werner can be reached on (571) 272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



**BRIAN WERNER**  
**SUPERVISORY PATENT EXAMINER**

/David P. Rashid/  
Examiner, Art Unit 2624

David P Rashid  
Examiner  
Art Unit 2624